Remarks

In the specification, the bridging paragraph at pages 8-9 has been amended to correct a minor typographical error of the name of the cited patent by *Doan* et al.

Claims 1, 11, 16, 22, 26, 30, 33, 46, 50, 52, 66-73, 101-110, 112-114, 116-117, 119-124, 127-129 have been amended to recite heating at a temperature of about 700°C. or greater. Support for the amendment is in the original claims as filed (e.g., Claim 27) and the specification at page 4, line 16, at page 11, line 24, and at page 13, line 25, for example.

Claims 23, 27, 31, 35 and 48 have been amended to recite that the heat treatement is at a temperature of about 700°C. to about 800°C., as supported in the specification at page 11, line 24, and at page 13, line 25, for example.

Rejections under 35 U.S.C. § 112(2)

The Examiner rejected Claims 1-3, 6-10, 35, 101, 106 and 112 under Section 112(2) for the use of indefinite claim language.

Claim 35 has been amended to recite "the" preceding the phrase "heat treatment" as suggested by the Examiner.

The Examiner maintains that the use of "undesirable" in Claims 1-3, 6-10, 101, 106 and 109-112 is unclear. Applicant traverses this rejection.

The term "undesirable component" recited in the claims is defined in the specification at page 8, lines 2-5:

> The term "undesirable component" refers to any element or compound contained within the contact material that will adversely affect a semiconductor device, for example, a high concentration of chlorine that can corrode an overlying aluminum interconnect and adversely affect the device."

As provided in MPEP 2173.02 (Clarity and Precision):

> ...The test for indefiniteness under 35 U.S.C. 112, second paragraph is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). If one skilled in the art is able to ascertain...the meaning of the terms... in light of the specification, 35 U.S.C. 112, second paragraph is satisfied.

Further, as provided in MPEP 2106(C) (Review the Claims):

> Office personnel must rely on the applicant's disclosure to properly determine the meaning of terms used in the claims. *Markman v. Westview Instruments,* 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir.) (enbanc), aff'd, U.S., 116 S.Ct. 1384 (1996). An applicant is entitled to be his or her own lexicographer, and in many instances will provide an explicit definition for certain terms used in the claims. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim....

In the present application, Applicant has set forth a definition in the specification for the term "undesirable component" allowing one having ordinary skill in the art to readily determine the scope of the claimed subject matter.

Moreover, the term "undesirable" itself is used according to its ordinary meaning. The Examiner is respectfully directed to the following definition of the term "undesirable":

> *The American Heritage® College Dictionary*, 3rd ed., page 1473, Houghton Mifflin Co., Boston, MA (1997):
>
> **Un de sir a ble...1.** Not likely to please; objectionable. **2.** Not wanted...

Accordingly, Applicant submits that the term "undesirable component" is clear in its meaning, and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 102(e)

The Examiner rejected Claims 1, 3-9, 11, 13, 14, 16, 18, 19, 21, 22, 24, 26, 28, 30, 37, 38, 49, 68, 71, 101-105, 112, 120, and 121 under Section 102(e) as anticipated by Wang (US 2002/0155218). Insofar as this rejection is maintained with respect to the claims as amended, this rejection is traversed.

The Examiner maintains that Wang discloses formation of titanium nitride layer 204 by reaction of NH_3, $TiCl_4$, and H_2, removal of layer 204 by CMP and thermal treatment of layer 204 in NH_3 containing atmosphere at 580°C. to reduce the chlorine content to 3% by weight, at paragraphs [0037]-[0049].

Wang does not disclose thermal heating of a contact in a reactive gas at a temperature of *about 700°C. or greater* to remove an undesirable component from the contact.

Wang fails to teach or suggest all of the limitations of the above-rejected claims. Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Wang with Hu. The Examiner rejected Claims 2, 12, 17, 23, 27, 31, 34, 35, 40-45, 114 and 116 under Section 103(a) as being obvious over Wang in view of Hu (USP 6,436,820). This rejection is respectfully traversed.

The Examiner admits that Wang does not disclose RTA to reduce the chlorine content below 3% by weight, but maintains that it would be obvious to alter the thermal treatment step of Wang to be performed by RTA at about 680°C., as disclosed by Hu.

First of all, Wang effectively teaches away from the use of an NH_3 anneal for removal of chlorine from a CVD deposited film. Wang expressly teaches the desirability of a plasma treatment using a H-containing plasma as compared to thermal annealing in NH_3 — which Wang teaches is not as effective in reducing Cl content in TiN films and has a less favorable aging effect. Wang at paragraphs [0045] and [0046]:

> [0045] *The plasma treatment using a hydrogen-containing plasma, such as that generated from H_2, is more effective in reducing the Cl content in TiN films compared to thermal annealing in NH_3.* For example, at a temperature of about 580°C., a TiN film has a Cl concentration of about 3% after NH_3 thermal anneal, compared to about 1.5% after a H_2/N_2 plasma treatment. Typically, the resistivity of a TiN film treated in a H_2/N_2 plasma, or more generally, a plasma comprising hydrogen and nitrogen, at about 580°C. is less than about 200-230 μohm-cm. In one embodiment, for example, a TiN film treated with a plasma comprising hydrogen has a resistivity of about 180 μohm-cm, *compared to about 320 μohm-cm after NH_3 thermal anneal.*
>
> [0046] *A more favorable aging effect is also observed for TiN films treated with a hydrogen-containing plasma compared to thermal anneal with NH_3.* For example, TiN films treated with a H_2 plasma exhibit less than 4% increase in sheet resistance after 24 hours, while other TiN films of the same thickness treated by thermal annealing in NH_3 show an increase of about 40%.

Thus, there is no motivation based on the foregoing disclosure in Wang to pursue a heat treatment — rather than a plasma treatment — to remove chlorine from a TiN contact, and certainly not a heat treatment at an increased temperature of 680°C. as described by Hu.

In addition, Wang basically teaches away from use of high process temperatures. Wang describes the disadvantage of prior art methods of thermal CVD of TiN performed at a

temperature of about 650°C. — stating that the high temperature is detrimental to the capacitor structure, and the desirability for a method of forming TiN films at reduced temperatures. Wang at paragraphs [0009] and [0010]:

> [0009] Although the Cl content in the deposited TiN film can be reduced by increasing the deposition temperature, improved step coverage is favored by lowering the deposition temperature. Furthermore, a relatively low deposition temperature is advantageous for process integration purposes. For example, TiN can be used as a barrier layer for an upper electrode in a capacitor structure with tantalum pentoxide (Ta_2O_5) as the dielectric. However, thermal CVD of TiN--e.g., using a reaction between $TiCl_4$ and NH_3, *is often performed at a temperature of about 650°C. Such a high temperature may cause undesirable atomic inter-diffusion within the capacitor structure.*
>
> [0010] Therefore, a need exists in the art for a method of depositing TiN *at a reduced temperature*, to yield thick, crack-free TiN films having improved properties including good step coverage and low resistivity.

Wang further teaches performing the plasma treatment at a temperature of about *500-600°C.* Wang at Table 2 (after paragraph [0044] lists the plasma treatment process parameters with the pedestal temperature at *580°C.* with a range of *400-600°C.* See also paragraph [0045] above describing the plasma treatment temperature[1], and, for example, Claim 2 reciting a temperature range of 500-600°C for the plasma treatment step (b).[2]

There is no motivation based on Wang's disclosure to increase a processing temperature higher than 600°C.

Thus, one of ordinary skill in the art would not be motivated to pursue the teaching of Hu as a modification of Wang's described process to remove chlorine from a TiN contact, and certainly not a heat treatment at an increased temperature of 680°C. as described by Hu.

Moreover, even if combined, the combination of Wang with Hu would not provide Applicant's invention as claimed in which the contact is heated in a reactive gas at a temperature of about 700°C. or greater. Wang particularly teaches an NH_3 anneal at a temperature of *680°C.* See, for example, Wang at cols. 4-5, bridging paragraph (and throughout the disclosure) (emphasis added):[3]

---

[1] Wang at paragraph [0045]: "...Typically, the resistivity of a TiN film treated in a H_2/N_2 plasma, or more generally, a plasma comprising hydrogen and nitrogen, at about 580°C. is less than about 200-230 μohm-cm..."

[2] Wang at Claim 2: "...wherein step (b) is performed at... at temperature between about 500 to about 600°C..."

[3] See also the Example at col. 6, lines 60-65 (emphasis added):

> *Applicants determined that* when a TiN film approximately 200 Å thick is annealed in the presence of NH_3, an annealing time of about 5 seconds produces a drastic decrease in film resistivity, which continues to decrease for treatment times out to about 40 seconds. ... FIG. 2 shows graph 200, which illustrates the effect on film resistivity of annealing a 200 Å thick TiN film, *when the film is annealed at approximately 680°C.,* in the presence of NH_3, at a pressure of about 10 Torr...Curve 260 illustrates that *for a TiN film annealed in the presence of NH_3 at the conditions specified above*, the resistivity of a film tends to decrease with annealing time up to about 20-30 seconds, then remain substantially constant up to at least 120 seconds annealing time...

One skilled in the art would have no motivation to combine the teachings of Wang with Hu, or to make the proposed modification of Wang. Clearly, based on the teachings of Wang, there is no motivation to modify Wang's process as proposed by the Examiner. Accordingly, withdrawal of this rejection based on the combination of Wang with Hu is respectfully requested.

Wang with/without Hu and Leem or Japan '220.

The Examiner rejected Claim 115 under Section 103(a) as being obvious over Wang in view of Hu, and further in view of Leem (USP 6,436,820) or Japan 5-267220 (Japan '220). The Examiner rejected Claims 10, 15, 20, 25, 29, 32, 39, 50-59, 61-63, 66, 67, 69, 70, 72, 73, 106-111, 113, 117-119, 122, and 123 under Section 103(a) as being obvious over Wang in view of Leem or Japan '220. These rejections are respectfully traversed.

The Examiner admits that the combination of Wang and Hu does not include formation of a boron containing titanium nitride film to for the contact, but maintains that it would be obvious to combine either Leem or Japan '220 to enable formation of a titanium nitride layer of Wang to incorporate boron.

The Examiner also admits that the combination of Wang does not disclose formation of one or more alternating layers as a titanium boronitride layer, but that it would be obvious to do so based on the disclosures of Leem or Japan '220.

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2. Treatment for Residual Chlorine Removal

After the deposition step was competed, and the flow of $TiCl_4$ into the chamber was stopped, the residual chlorine removal treatment was carried out as follows: The substrate, including the TiN film, *was maintained at a temperature of about 680°C.*, and the following process gases were fed to the process chamber to produce the ambient for chlorine removal from the deposited film....

Leem discloses the fabrication of aluminum contacts that include formation of a diffusion barrier layer and buffer layer(s), which can be a layer of titanium boron nitride.

Japan '220 discloses the fabrication of tungsten metal plugs having a titanium layer 103 and an adhesion layer 110, which can be a layer of titanium boronitride.

As stated above, there is no motivation to modify Wang's process to utilize a heat treatment of the contact at a temperature of 700°C. or greater. Thus, even with the consideration of the disclosure of Leem or Japan '220 to incorporate a layer of titanium boronitride into the contact structure, one would not arrive at Applicant's invention as claimed.

As the combination of Wang and Hu does not provide Applicant's invention as recited in the claims, combining the teaching of either Leem or Japan '220 does not make up for the insufficiencies of either Wang alone or combined with Hu. Accordingly, withdrawal of these rejections is respectfully requested.

Furthermore, one skilled in the art would not be motivated to utilize the disclosure of Japan '220 to modify Wang's process.

Japan '220 acknowledges the problem with Cl incorporation into a TiN layer. To that end, Japan '220 teaches formation of a TiN adhesion layer at a temperature of **650°C.** — and the resulting removal of Cl from the adhesion layer.[4] Japan '220 particularly describes Example 5 in which a TiB_xN_{1-x} adhesion layer is formed, including heating the substrate to **650°C.** whereby Cl is removed and exhausted from the system. Japan '220 at paragraphs [0046]-[0049] (emphasis added):

> [0049] The [process -520], then the adhesion layer which consist of TiB_xN_{1-x} were formed. ...The membrane formation conditions of the adhesion layer 110 which consists of TiB_xN_{1-x} were carried out as follows[:] *temperature About 650 degreeC*...The semiconductor substrate 100 is heated to about *650 degreeC*...*Moreover, Cl is also exhausted from* ...CVD system 1 with ...the volatile high compound HCl, and its Cl content of Ti layer and an adhesion layer decreases, and membraneous quality's improves..."

[4] See Japan '220, translation at page 5 of 12, lines 1-9: "...Moreover, Cl is also exhausted from ...CVD system 1 with ...the volatile high compound HCl, and its Cl content of Ti layer and an adhesion layer decreases, and membraneous quality's improves..."

This is contrary to Wang's teaching of the criticality of forming a titanium nitride layer at a temperature of *less than about 600°C*. See Wang at paragraphs [0009] and [0010] (above), and at paragraph [0011].[5] One skilled in the art would not look to the teachings of Japan '220 for a modification of Wang's disclosed process for forming a TiN contact.

Wang with Doan. The Examiner rejected Claims 36, 46, 47, 64 and 65 under Section 103(a) as being obvious over Wang in view of Doan (US 2001/0006240). This rejection is respectfully traversed.

The Examiner admits that Wang does not disclose formation of the $TiSi_2$ layer by PECVD [sic] or sputtering, but that it would be obvious to do so based on Doan's disclosure.

Claims 36 and 64 recite formation of a $TiSi_2$ layer by *plasma enhanced* CVD (PACVD) — not PECVD. Applicant assumes that the Examiner meant to cite Doan for disclosing the formation of a $TiSi_2$ layer by PACVD.

As to Claims 46-47, those claims do not specify the formation of a $TiSi_2$ layer by PECVD [or PECVD] or sputtering. As to those claims, the Examiner is requested to withdraw the rejection based on Wang with Dean.

Applicant does not dispute that Doan teaches the formation of titanium silicon by PACVD [paragraph 0034], and discloses prior art methods of forming titanium silicide including sputtering [paragraph 0007]. The Examiner is directed to the specification at page 9, lines 2-5,[6] whereby Applicant incorporated the disclosure of techniques and process systems for forming

---

[5] Wang at paragraphs [0009]-[0011]: [0009] (emphasis added):

[0009]...However, thermal CVD of TiN--e.g., using a reaction between $TiCl_4$ and NH_3, *is often performed at a temperature of about 650°C. Such a high temperature may cause undesirable atomic inter-diffusion within the capacitor structure.*

[0010] Therefore, a need exists in the art *for a method of depositing TiN at a reduced temperature....*

[0011] The present invention is a method of forming a titanium nitride (TiN) layer using a reaction between ammonia (NH_3) and titanium tetrachloride ($TiCl_4$) *at ...a temperature of less than about 600°C.*, followed by treating the TiN layer in a hydrogen-containing plasma.

[6] Specification at page 9, lines 2-5: "...Techniques and process systems for forming a titanium silicide layer are well known in the art, as described, for example, in U.S. Patent No. 6,086,442 (Sandhu, et al.) and No. 5,976,976 (Doan, et al.), the disclosures of which are incorporated by reference herein."

titanium silicide layers within USP 5,976,976 (Doan), which is the parent of Doan US 2001/0006240, cited by the Examiner.

However, the mere combination of Wang disclosure with Dean's process for forming a titanium silicide layer does not arrive at Applicant's methods as claimed.

Neither reference teaches or suggests thermal heating of a contact in a reactive gas at a temperature of *about 700°C. or greater* to remove an undesirable component from the contact. Accordingly, withdrawal of this rejection is respectfully requested.

Extension of Term. The proceedings herein are for a patent application and the provisions of 37 CFR § 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that Applicant has inadvertently overlooked the need for a petition for extension of time. If any extension and/or fee are required, please charge Account No. 23-2053.

It is submitted that the present claims are in condition for allowance, and notification to that effect is respectfully requested.

Respectfully submitted,

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to sign or endorse (a document). **5.** To support or agree to (a decision, for example). — *intr.* To act as an underwriter, esp. to issue an insurance policy.

un·der·writ·er (ŭn′dər-rī′tər) *n.* One that underwrites, esp.: **a.** A person or firm engaged in the insurance business. **b.** An insurance agent who assesses the risk of enrolling an applicant for coverage or a policy. **c.** One that guarantees the purchase of a full issue of stocks or bonds.

un·de·scend·ed testicle (ŭn′dĭ-sĕn′dĭd) *n.* A testicle that has remained within the inguinal canal and has not descended to the scrotum.

un·de·sign·ing (ŭn′dĭ-zī′nĭng) *adj.* Having no ulterior motives; straightforward.

un·de·sir·a·ble (ŭn′dĭ-zīr′ə-bəl) *adj.* **1.** Not likely to please; objectionable. **2.** Not wanted: *undesirable aliens.* — *n.* A person regarded as undesirable. — **un′de·sir′a·bil′i·ty** *n.* — **un′de·sir′a·bly** *adv.*

un·de·ter·mined (ŭn′dĭ-tûr′mĭnd) *adj.* **1.** Not yet determined; undecided. **2.** Not specifically known or ascertained.

un·dies (ŭn′dēz) *pl.n. Informal.* Underwear, esp. for women or girls.

un·dine (ŭn-dēn′, ŭn′dēn′) *n.* According to Paracelsus, a female water spirit who could earn a soul by marrying a mortal and bearing his child. [NLat. *undīna* < Lat. *unda*, wave. See **wed-**[1]*.]

un·dip·lo·mat·ic (ŭn-dĭp′lə-măt′ĭk) *adj.* Not tactful or diplomatic. — **un·dip′lo·mat′i·cal·ly** *adv.*

un·di·rect·ed (ŭn′dĭ-rĕk′tĭd, -dī-) *adj.* **1.** Having no object or purpose; not guided. **2.** Having no prescribed destination. Used of mail.

un·dis·charged (ŭn′dĭs-chärjd′) *adj.* **1.** Not fulfilled: *an undischarged obligation.* **2.** Not paid: *an undischarged debt.* **3.** Not unloaded. Used of a ship's cargo.

un·dis·crim·i·nat·ing (ŭn′dĭ-skrĭm′ə-nā′tĭng) *adj.* **1.** Lacking sensitivity, taste, or judgment. **2.** Indiscriminate.

un·dis·posed (ŭn′dĭ-spōzd′) *adj.* **1.** Not settled, removed, or resolved: *undisposed assets.* **2.** Disinclined; unwilling.

un·dis·tin·guished (ŭn′dĭ-stĭng′gwĭsht) *adj.* **1.a.** Marked by no peculiar quality; not distinguished; ordinary. **b.** Lacking particularly good qualities; mediocre. **2.** Not separated from others into categories. **3.a.** Incapable of being noticed or perceived individually from others; indistinguishable. **b.** Unnoticed; unperceived.

un·do (ŭn-dōō′) *v.* **-did** (-dĭd′), **-done** (-dŭn′), **-do·ing** (-dōō′ĭng), **-does** (-dŭz′). — *tr.* **1.** To reverse or erase; annul. **2.** To untie, disassemble, or loosen: *undo a shoelace.* **3.** To open (a parcel, for example); unwrap. **4.a.** To cause the ruin or downfall of; destroy. **b.** To throw into confusion; unsettle. **5.** *Obsolete.* To solve or interpret; unravel. — *intr.* To come open or unfastened. — **un·do′er** *n.*

un·dock (ŭn-dŏk′) *tr.v.* **-docked, -dock·ing, -docks. 1.** *Naut.* To move (a ship) away from a dock. **2.** To uncouple (spacecraft).

un·doc·u·ment·ed (ŭn-dŏk′yə-mĕn′tĭd) *adj.* **1.** Not supported by written evidence: *undocumented accusations.* **2.** Not having the needed documents, as for permission to live or work in a foreign country. — *n.* A person not having proper documentation, esp. for immigration.

un·do·ing (ŭn-dōō′ĭng) *n.* **1.** The act of unfastening or loosening. **2.a.** Ruin; destruction. **b.** The act of bringing to ruin. **c.** A cause or source of ruin; downfall. **3.** The act of reversing or annulling something accomplished; a cancellation.

un·dou·ble (ŭn-dŭb′əl) *tr.v.* **-bled, -bling, -bles.** To unfold, as a piece of paper money.

un·doubt·ed (ŭn-dou′tĭd) *adj.* Accepted as beyond question; undisputed. See Syns at **authentic.** — **un·doubt′ed·ly** *adv.*

un·draw (ŭn-drô′) *tr.v.* **-drew** (-drōō′), **-drawn** (-drôn′), **-draw·ing, -draws.** To draw to one side, as a curtain.

un·dreamed (ŭn-drēmd′) also **un·dreamt** (-drĕmt′) *adj.* Beyond what could be imagined; unimaginable. Often used with *of*: *a peaceful settlement undreamed of a generation ago.*

un·dress (ŭn-drĕs′) *v.* **-dressed, -dress·ing, -dress·es.** — *tr.* **1.** To remove the clothing of; disrobe. **2.** To remove the bandages from (a wound, for example). — *intr.* To take off one's clothing. — *n.* **1.** Informal attire or uniform. **2.a.** Nakedness or partial nakedness. **b.** Partial but incomplete dress.

un·dressed (ŭn-drĕst′) *adj.* **1.a.** Naked. **b.** Partially but not fully dressed. **2.** Not specially treated or processed: *undressed leather.* **3.a.** Not prepared for cooking or eating. Used of certain meats. **b.** Lacking sauce or dressing. Used of a salad. **4.** Not treated or bandaged: *an undressed wound.*

Und·set (ōōn′sĕt′), **Sigrid.** 1882–1949. Danish-born Norwegian writer who won the 1928 Nobel Prize for literature.

un·due (ŭn-dōō′, -dyōō′) *adj.* **1.** Exceeding what is appropriate or normal; excessive. **2.** Not just, proper, or legal: *undue use of force.* **3.** Not yet payable or due: *an undue loan.*

un·du·lant (ŭn′jə-lənt, ŭn′dyə-, -də-) *adj.* Resembling waves in occurrence, appearance, or motion.

undulant fever *n.* See **brucellosis 1.**

un·du·late (ŭn′jə-lāt′, ŭn′dyə-, -də-) *v.* **-lat·ed, -lat·ing, -lates.** — *tr.* **1.** To cause to move in a smooth wavelike motion. **2.** To give a wavelike appearance or form to. — *intr.* **1.** To move in waves or with a smooth wavelike motion. **2.** To have a wavelike appearance or form. **3.** To increase and decrease in volume or pitch as if in waves. — *adj.* (-lĭt, -lāt′) Having a wavy outline or appearance. [< LLat. *undula*, small wave, dim. of Lat. *unda*, wave. See **wed-**[1]*.] — **un′du·la·to′ry** (-lə-tôr′ē, -tōr′ē) *adj.*

un·du·la·tion (ŭn′jə-lā′shən, ŭn′dyə-, -də-) *n.* **1.** A regular rising and falling or movement to alternating sides; movement in waves. **2.** A wavelike form, outline, or appearance. **3.** One of a series of waves or wavelike segments.

un·du·ly (ŭn-dōō′lē, -dyōō′-) *adv.* Excessively; immoderately: *unduly familiar with strangers.*

un·du·ti·ful (ŭn-dōō′tĭ-fəl, -dyōō′-) *adj.* **1.** Lacking a sense of duty. **2.** Unreliable or disobedient. — **un·du′ti·ful·ly** *adv.* — **un·du′ti·ful·ness** *n.*

un·dy·ing (ŭn-dī′ĭng) *adj.* Endless; everlasting; immortal.

un·earned (ŭn-ûrnd′) *adj.* **1.** Not gained by work or service: *unearned income.* **2.** Not deserved: *unearned luck.* **3.** Paid in anticipation of goods or services not yet rendered.

unearned increment *n.* The increase in property value resulting from factors independent of the owner, such as a general rise in demand for land.

un·earth (ŭn-ûrth′) *tr.v.* **-earthed, -earth·ing, -earths. 1.** To bring up out of the earth; dig up. **2.** To bring to public notice; uncover.

un·earth·ly (ŭn-ûrth′lē) *adj.* **-li·er, -li·est. 1.** Not of this earth; preternatural; supernatural. **2.** Unnaturally strange and frightening; eerie. **3.** Ridiculously unreasonable or uncustomary; absurd. — **un·earth′li·ness** *n.*

un·eas·y (ŭn-ē′zē) *adj.* **-i·er, -i·est. 1.** Lacking a sense of security; anxious or apprehensive. **2.** Affording no ease or reassurance: *an uneasy calm.* **3.a.** Awkward or unsure in manner; constrained: *uneasy with strangers.* **b.** Causing constraint or awkwardness: *an uneasy silence.* **4.** Not conducive to rest: *an uneasy sleep.* — **un·ease′**, **un·eas′i·ness** *n.* — **un·eas′i·ly** *adv.*

un·ed·it·ed (ŭn-ĕd′ĭ-tĭd) *adj.* **1.** Not edited or revised. **2.** Not adapted for a special audience or purpose.

un·ed·u·cat·ed (ŭn-ĕj′ə-kā′tĭd) *adj.* Not educated.

un·e·lect·a·ble (ŭn′ĭ-lĕk′tə-bəl) *adj.* Being such that election, as to high office, is difficult or impossible.

un·em·ploy·ment compensation (ŭn′ĕm-ploi′mənt) *n.* Financial compensation for unemployed workers, provided in the United States chiefly by state governments.

un-Eng·lish (ŭn-ĭng′glĭsh) *adj.* **1.** Not having the characteristics of British people or practices. **2.** Not in agreement with standard English usage.

un·e·qual (ŭn-ē′kwəl) *adj.* **1.** Not the same in any measurable aspect, such as extent or quantity. **2.** Not the same as another in rank or social position. **3.** Consisting of ill-matched opponents: *an unequal contest.* **4.** Having unbalanced sides or parts; asymmetrical. **5.** Not even or consistent; variable. **6.** Not having the required abilities. **7.** Not fair. — *n.* One that is not the equal of another. — **un·e′qual·ly** *adv.*

un·e·qualed also **un·e·qualled** (ŭn-ē′kwəld) *adj.* Not matched or paralleled by others of its kind; unrivaled.

un·e·quiv·o·cal (ŭn′ĭ-kwĭv′ə-kəl) *adj.* Admitting of no doubt or misunderstanding; clear and unambiguous: *an unequivocal success.* — **un′e·quiv′o·cal·ly** *adv.*

UNESCO *abbr.* United Nations Educational, Scientific, and Cultural Organization.

un·es·sen·tial (ŭn′ĭ-sĕn′shəl) *adj.* Not necessary or important; dispensable. — *n.* One that is unnecessary.

un·e·ven (ŭn-ē′vən) *adj.* **-er, -est. 1.a.** Not equal, as in size, length, or quality. **b.** Having ill-matched opponents: *an uneven contest.* **2.** Not consistent or uniform: *an uneven color.* **3.** Not smooth or level. **4.** Not straight or parallel. **5.** Of, relating to, or being an odd number. **6.** *Obsolete.* Not fair or equitable. — **un·e′ven·ly** *adv.* — **un·e′ven·ness** *n.*

un·e·vent·ful (ŭn′ĭ-vĕnt′fəl) *adj.* **1.** Lacking in significant events. **2.** Occurring without disruption. — **un′e·vent′ful·ly** *adv.* — **un′e·vent′ful·ness** *n.*

un·ex·am·pled (ŭn′ĭg-zăm′pəld) *adj.* Without precedent; unparalleled.

un·ex·cep·tion·a·ble (ŭn′ĭk-sĕp′shə-nə-bəl) *adj.* Beyond any reasonable objection; irreproachable. — **un′ex·cep′tion·a·ble·ness** *n.* — **un′ex·cep′tion·a·bly** *adv.*

Usage Note: *Unexceptionable* is derived from the word *exception* in the sense "objection," as in the idiom *take exception.* Thus *unexceptionable* means "not open to any objection," as in *A judge's ethical standards should be unexceptionable. Unexceptional,* in contrast, is related to the common sense of *exception* and generally means "not exceptional, not varying from the usual," as in *Some judges' ethical standards have unfortunately been unexceptional.*

un·ex·cep·tion·al (ŭn′ĭk-sĕp′shə-nəl) *adj.* **1.** Not varying from a norm; usual: *an unexceptional performance.* **2.** Not subject to exceptions; absolute. See Usage Note at **unexceptionable.** — **un′ex·cep′tion·al·ly** *adv.*

un·ex·pect·ed (ŭn′ĭk-spĕk′tĭd) *adj.* Coming without warning; unforeseen. — **un′ex·pect′ed·ly** *adv.* — **un′ex·pect′ed·ness** *n.*

ă pat	oi boy
ā pay	ou out
âr care	ŏŏ took
ä father	ōō boot
ĕ pet	ŭ cut
ē be	ûr urge
ĭ pit	th thin
ī pie	*th* this
îr pier	hw which
ŏ pot	zh vision
ō toe	ə about,
ô paw	item

Stress marks:
′ (primary);
′ (secondary), as in dictionary (dĭk′shə-nĕr′ē)